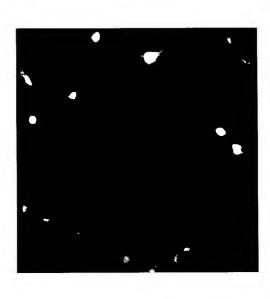
Figure 1



Hoechst 33342 Stain



Green Fluorescent Protein

Figure 2

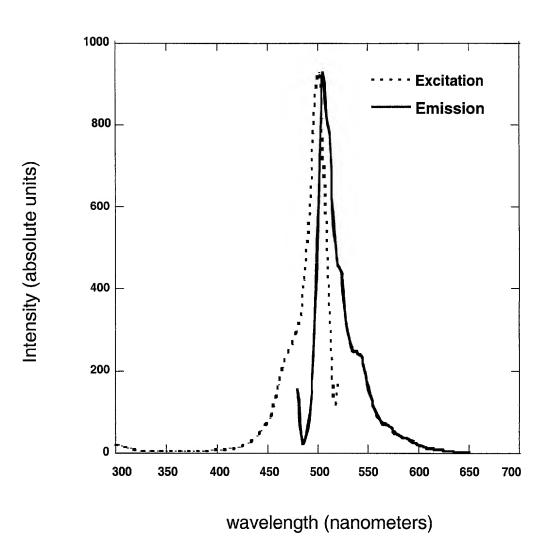
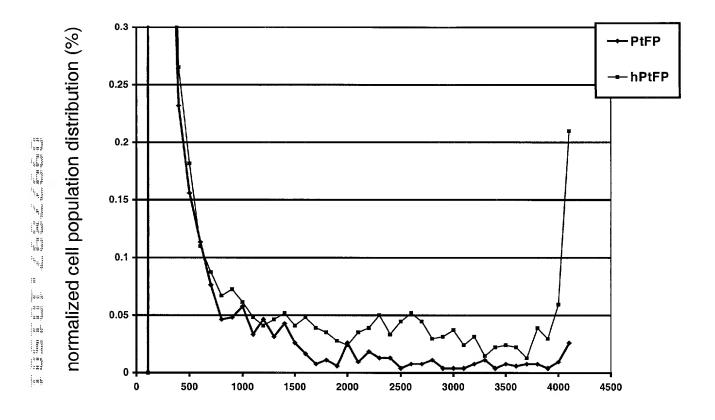


Figure 3

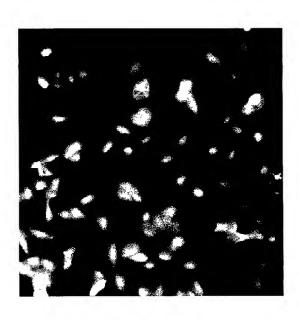


fluorescence intensity

Figure 4



HEK 293 cells



A549 cells

Figure 5

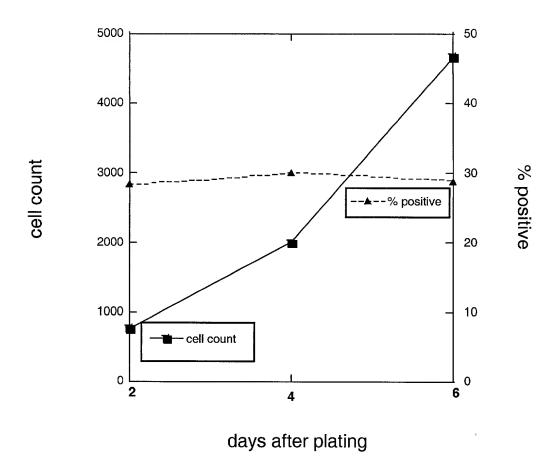


Figure 6

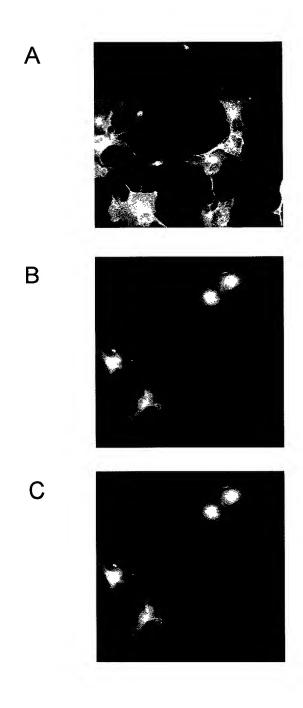


Figure 7

Caspase-3 biosensor

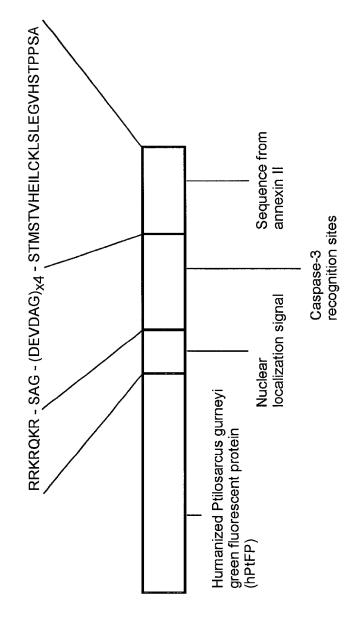
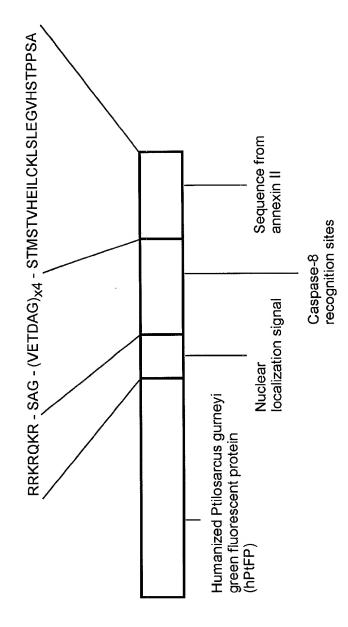


Figure 8

Caspase-8 biosensor



	1	Figure 9																			
		Ma.h	Met								-6										
	+1	Met	vaı	Asn	Ara	Asn	Val	Leu	Lvs	Asn	Thr	Gly	Leu	Lys	Glu	Ile	Met	Ser	Ala	Lys	Ala
PtFP	1			AAC	CGC	AAC	GTA	ATT	AAG	AAC	ACT	GGA	CTG	AAA	GAG	ATT	ATG	TCG	GCA	AAA	GCT
hPtFP	1	ATG		AAC		AAC			AAG	AAC			CTG		GAG		ATG				
			***		*		*	* *			*	*		*		*		***	*	*	*
	+1	Ser	Val	Glu	Gly	Ile	Val	Asn	Asn	His	Val	Phe	Ser	Met	Glu	Gly	Phe	Gly	Lys	Gly	Asn
PtFP	61	AGC	GTT	GAA	GGA	ATC	GTG	AAC	TAA	CAC	GTT	TTT	TCC	ATG	GAA	GGA	TTT	GGA	AAA	GGC	TAA
hPtFP	61	AGC	GTG *	GAG *	GGC *	ATC	GTG	AAC	AAC *	CAC	GTG *	TTC *		ATG	GAG *	GGC *	TTC *	GGC *	AAG *	GGC	AAC
				*	•				•		^	•			•	•		•			•
	+1	Val	Leu	Phe	Gly	Asn	Gln	Leu	Met	Gln	Ile	Arg	Val	Thr	Lys	Gly	Gly	Pro	Leu	Pro	Phe
PtFP	121					AAC															
hPtFP	121		CTG * *	TTC *	GGC *	AAC	CAG *		ATG		ATC	CGG	GTG	ACC	AAG	GGC	GGC	CCT	CTG		TTC
		*	* *	*	*		*	*		*			*	*		*	*	*	*	*	
	+1	Ala	Phe	Asp	Ile	Val	Ser	Ile	Ala	Phe	Gln	Tyr	Gly	Asn	Arg	Thr	Phe	Thr	Lys	Tyr	Pro
PtFP	181	GCT	TTC	GAT	ATT	GTT	TCC	ATA	GCT	TTC	CAA	TAC	GGG	AAT	CGC	ACT	TTC	ACG	AAA	TAC	CCA
hPtFP	181	GCC *	TTC	GAC	ATC	GTG	AGC	ATC	GCC	TTC	CAG *	TAC	GGC	AAC	CGG	ACC	TTC	ACC	AAG	TAT	CCC
					-			-	-		•		•	•	•	•		•	*	*	*
	+1					Asp															
PtFP	241					GAC															
hPtFP	241	GAC	GAC	ATC *	GCC *	GAC	TAC	TTC *	GTG	CAG *	AGC	TTC	CCT	GCC	GGC *	TTC	TTC	TAC	GAG	CGG * *	AAC
														-		•			•		•
178		Leu	Arg	Phe	Glu	Asp	Gly	Ala	Ile	Val	Asp	Ile	Arg	Ser	Asp	Ile	Ser	Leu	Glu	Asp	Asp
PtFP hPtFP	301 301					GAT															
HF CFF	301	*	1 *	*	GAG *	GAC *	GGC	GCC	ATC *	G1G *	GAC	ATC *		AGC ***	GAC *	ATC	AGC *		GAG *	GAC *	GAC *
18												ø									
PtFP.		Lys	Phe	His	Tyr	Lys	Val	Glu	Tyr	Arg	Gly	Asn	Gly	Phe	Pro	Ser	Asn	Gly	Pro	Val	Met
hPtFB	361 361					AAA AAG															
and the second						*		00		* *	-	71110	*	110	CCI	*	AAC	*	*	GIG	AIG
223	_		_			_	_		_												
PtFP	+1 421	CAA	гуу	GCC	TTE	Leu CTC	GLY	Met	Glu	Pro	Ser	Phe	Glu	Val	Val	Tyr	Met	Asn	Ser	Gly	Val
hPtFP	421	CAG	AAG	GCC	ATC	CTG	GGC	ATG	GAG	CCC	AGC	TTC	GAG	GTG	GTG	TAC	ATG	AAC	AGC	GGC	GTG
		*	*			*					***	*									*
	д1	T.e11	₹7:a T	G]v	G) II	7757	7 an	Ton	17- I	Mr esa	T	T	G3	a	~3	-	_	_	_	_	•
PtFP	481	CTG	GTG	GGC	GAA	Val GTA	GAT	СТС	GTT	TAC	Lys	ьеи СтС	GIU	Ser TCA	GTA	Asn	Tyr	Tyr	Ser	Cys	His
hPtFP	481	CTG	GTG	GGC	GAG	GTG	GAC	CTG	GTG	TAC	AAG	CTG	GAG	AGC	GGC	AAC	TAC	TAC	AGC	TGC	CAC
					*	*	*	*	*		*	*		***			*		***		
	+1	Met.	Lvs	Thr	Phe	Tyr	Δτα	Ser	Lare	G] w	G] v	1707	Tva	<i>α</i> 1	Dho	Dwa	a 3		TT d on	Dho	T1.
PtFP	541					TAC														-	
hPtFP	541					TAC															
			*	*	*		* *	**	*	*	*		*	*		*	*	*		*	
	+1	His	His	Ara	Len	Glu	Lvc	ጥ ኮ ዮ	ጥረታ	Val	Glu	G] 17	Glτ	Ser	Dhe	τ/a 1	Glu	Gl n	Hig	Glu	Thr
PtFP	601					GAG	_						_								
hPtFP	601			CGG		GAG															
,		*	*	*			*				*	*	*				*	*			*

+1 Ala Ile Ala Gln Leu Thr Thr Ile Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val ***. 661 GCC ATT GCA CAA CTG ACC ACA ATT GGA AAA CCT CTG GGC TCC CTT CAT GAA TGG GTG TAG

hPtfp 661 GCC ATC GCC CAG CTG ACC ACC ATC GGC AAG CCT CTG GGC AGC CTG CAC GAG TGG GTG TAA

HindIII

- +1 M V N R N V L K N T G

 1 AAG CTT GCC ACC ATG GTG AAC CGG AAC GTG CTG AAG AAC ACC GGC

 TTC GAA CGG TGG TAC CAC TTG GCC TTG CAC GAC TTC TTG TGG CCG
- +1 L K Е I S K S Μ А А ν Е G T ٧ CTG AAG GAG ATC ATG AGC GCC AAG GCC AGC GTG GAG GGC ATC GTG GAC TTC CTC TAG TAC TCG CGG TTC CGG TCG CAC CTC CCG TAG CAC
- +1 N N H V F S M E G F G K G N V
 91 AAC AAC CAC GTG TTC AGC ATG GAG GGC TTC GGC AAG GGC AAC GTG
 TTG TTG GTG CAC AAG TCG TAC CTC CCG AAG CCG TTC CCG TTG CAC
- +1 L F G N Q L M Q I R V T K G G
 136 CTG TTC GGC AAC CAG CTG ATG CAG ATC CGG GTG ACC AAG GGC GGC
 GAC AAG CCG TTG GTC GAC TAC GTC TAG GCC CAC TGG TTC CCG CCG
- +1 L Р F F D Ι ν Ι Α S Α F 0 Y CCT CTG CCC TTC GCC TTC GAC ATC GTG AGC ATC GCC TTC CAG TAC GGA GAC GGG AAG CGG AAG CTG TAG CAC TCG TAG CGG AAG GTC ATG
- G N T F +1 R T K Y Ρ D D Ι D Y GGC AAC CGG ACC TTC ACC AAG TAT CCC GAC GAC ATC GCC GAC TAC CCG TTG GCC TGG AAG TGG TTC ATA GGG CTG CTG TAG CGG CTG ATG
- +1 F V Q S F P A G F F Y E R N L 271 TTC GTG CAG AGC TTC CCT GCC GGC TTC TTC TAC GAG CGG AAC CTG AAG CAC GTC TCG AAG GGA CGG CCG AAG AAG ATG CTC GCC TTG GAC
- +1 R F E D G A I V D I R S D I S
 316 CGG TTC GAG GAC GGC GCC ATC GTG GAC ATC CGG AGC GAC ATC AGC
 GCC AAG CTC CTG CCG CGG TAG CAC CTG TAG GCC TCG CTG TAG TCG
- +1 L E D D K F H Y K V E Y R G N
 361 CTG GAG GAC GAC AAG TTC CAC TAC AAG GTG GAG TAC CGC GGC AAC
 GAC CTC CTG CTG TTC AAG GTG ATG TTC CAC CTC ATG GCG CCG TTG
- +1 G F P S N G P V M Q K A I L G 406 GGC TTC CCT AGC AAC GGC CCT GTG ATG CAG AAG GCC ATC CTG GGC CCG AAG GGA TCG TTG CCG GGA CAC TAC GTC TTC CGG TAG GAC CCG
- +1 M E P S F E V V Y M N S G V L
 451 ATG GAG CCC AGC TTC GAG GTG GTG TAC ATG AAC AGC GGC GTG CTG
 TAC CTC GGG TCG AAG CTC CAC CAC ATG TAC TTG TCG CCG CAC GAC
- +1 V G E V D ۲. ν Υ K Ŀ Y E S G 496 GTG GGC GAG GTG GAC CTG GTG TAC AAG CTG GAG AGC GGC AAC TAC CAC CCG CTC CAC CTG GAC CAC ATG TTC GAC CTC TCG CCG TTG ATG
 - +1 Y S C H ĸ М Т F Y R S K G G V

- 541 TAC AGC TGC CAC ATG AAG ACC TTC TAC CGG AGC AAG GGC GGC GTG ATG TCG ACG GTG TAC TTC TGG AAG ATG GCC TCG TTC CCG CCG CAC
- +1 K E F P E Y H F I H H R L E K 586 AAG GAG TTC CCT GAG TAC CAC TTC ATC CAC CAC CGG CTG GAG AAG TTC CTC AAG GGA CTC ATG GTG AAG TAG GTG GTG GCC GAC CTC TTC
- +1 T Y V E E G S F V E Q H E T A
 631 ACC TAC GTG GAG GAG GGC AGC TTC GTG GAG CAC GAG ACC GCC
 TGG ATG CAC CTC CTC CCG TCG AAG CAC CTC GTC GTG CTC TGG CGG
- +1 I A Q L T T I G K P L G S L H
 676 ATC GCC CAG CTG ACC ACC ATC GGC AAG CCT CTG GGC AGC CTG CAC
 TAG CGG GTC GAC TGG TGG TAG CCG TTC GGA GAC CCG TCG GAC GTG

NotI

+1 E W V *
721 GAG TGG GTG TAA AGC GGC CGC
CTC ACC CAC ATT TCG CCG GCG

Figure 10 (continued)

The coding sequence (from start codon to stop codon):

atggtgaaccggaacgtgctgaagaacaccggcctgaaggagatcatgagcgcaag gccagcgtggagggcatcgtgaacaaccacgtgttcagcatggagggcttcggcaag ggcaacgtgctgttcggcaaccagctgatgcagatccgggtgaccaagggcgccct ctgcccttcgccttcgacatcgtgagcatcgccttccagtacggcaaccggaccttc accaagtatcccgacgacatcgccgactacttcgtgcagagcttccctgccggcttc ttctacgagcggaacctgcggttcgaggacggcgccatcgtggacatccggagcgac atcagcctggaggacgacaagttccactacaaggtggagtaccgcggcaacggcttc cctagcaacggccctgtgatgcagaaggccatcctgggcatggagccagcttcgag gtggtgtacatgaacagcggcgtgctggtgggcgaggtggacctggtgtacaagctg gagagcggcaactactacagctgccacatgaagaccttctaccggagcaagggcggc gtgaaggagttccctgagtaccacttcatccaccaccggctggagaagacctacgtg gaggagggcagcttcgtggagcagcacgagaccgccatcgccagctgaccaccatc

Figure 11

Figure 13

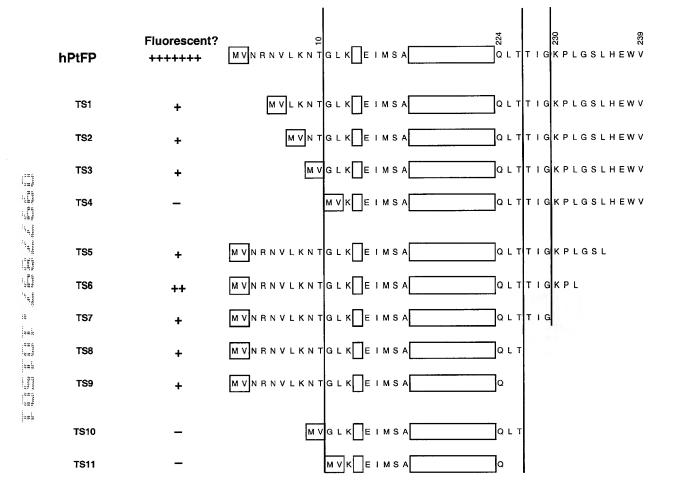
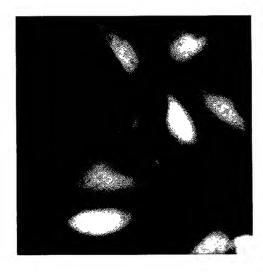


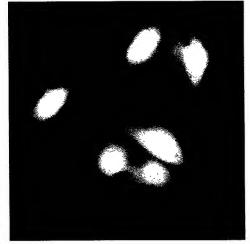
Figure 14



no treatment



Staurosporine 10 nM 6 hours



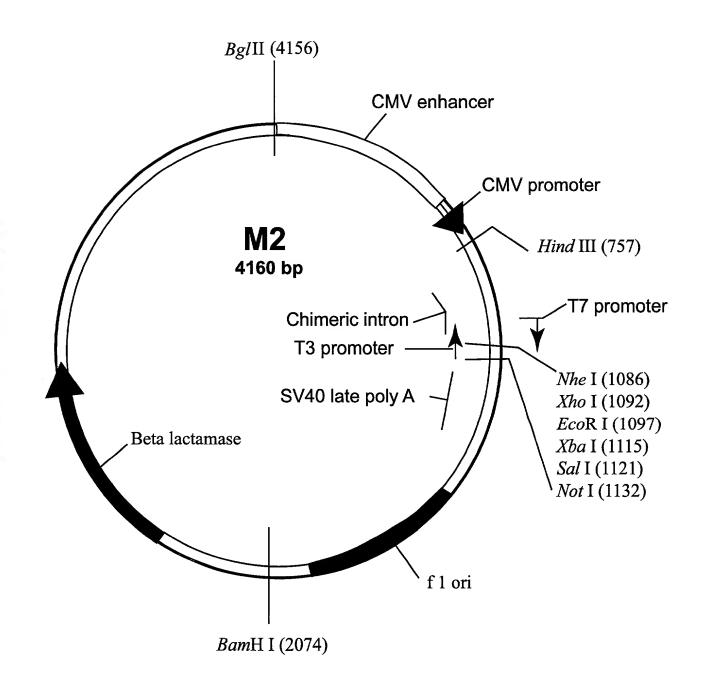
Staurosporine 1 nM 24 hours

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                        UCU S 0.18 (161556)
                                              UAU Y 0.43 (133427)
                                                                    UGU C 0.45 (108740)
  UUC F 0.55 (225633)
                        UCC S 0.22 (192616)
                                              UAC Y 0.57 (174805)
                                                                    UGC C 0.55 (134523)
  UUA L 0.07 ( 79303)
                                              UAA * 0.29 ( 8187)
                        UCA 5 0.15 (128429)
                                                                    UGA * 0.50 ( 14381)
  UUG L 0.13 (135218)
                        UCG S 0.06 ( 49456)
                                              UAG * 0.21 (
                                                             5913)
                                                                    UGG W 1.00 (142435)
  CUU L 0.13 (139009)
                        CCU P 0.28 (189374)
                                              CAU H 0.41 (113684)
                                                                    CGU R 0.08 ( 51100)
CUC L 0.20 (210903)
                        CCC P 0.33 (219428)
                                              CAC H 0.59 (162826)
                                                                    CGC R 0.19 (118404)
  CUA L 0.07 ( 75667)
                        CCA P 0.27 (182506)
                                              CAA Q 0.26 (130857)
                                                                    CGA R 0.11 ( 68664)
  CUG L 0.40 (435317)
                        CCG P 0.11 ( 76684)
                                              CAG Q 0.74 (377006)
                                                                    CGG R 0.21 (126679)
  AUU I 0.35 (174021)
                        ACU T 0.24 (140780)
                                              AAU N 0.46 (186915)
                                                                    AGU S 0.15 (131222)
AUC I 0.49 (240138)
                        ACC T 0.36 (213626)
                                              AAC N 0.54 (218376)
                                                                    AGC S 0.24 (211962)
AUA I 0.16 ( 78463)
                        ACA T 0.28 (162837)
                                              AAA K 0.42 (262630)
                                                                    AGA R 0.20 (125600)
AUG M 1.00 (244236)
                        ACG T 0.12 ( 69346)
                                              AAG K 0.58 (359627)
                                                                    AGG R 0.20 (123646)
  GUU V 0.18 (119013)
                        GCU A 0.26 (202329)
                                              GAU D 0.46 (245435)
                                                                    GGU G 0.16 (118798)
GUC V 0.24 (160764)
                        GCC A 0.40 (310626)
                                              GAC D 0.54 (287040)
                                                                    GGC G 0.34 (250410)
                        GCA A 0.23 (173010)
  GUA V 0.11 ( 76398)
                                              GAA E 0.42 (317703)
                                                                    GGA G 0.25 (180955)
  GUG V 0.47 (317359)
                        GCG A 0.11 ( 82647)
                                              GAG E 0.58 (441298)
                                                                    GGG G 0.25 (180001)
es k
House of
1
```

Figure 15

en:

Figure 16



tcaatattggccattagccatattattcattggttatatagcataaatcaatattggct attggccattgcatacgttgtatctatatcataatatgtacatttatattggctcatgt ccaatatgaccgccatgttggcattgattattgactagttattaatagtaatcaattac ggggtcattagttcatagcccatatatggagttccgcgttacataacttacggtaaatg gcccgcctggctgaccgcccaacgacccccgcccattgacgtcaataatgacgtatgtt cccatagtaacgccaatagggactttccattgacgtcaatgggtggagtatttacggta aactgcccacttggcagtacatcaagtgtatcatatgccaagtccgccccctattgacg tcaatgacggtaaatggcccgcctggcattatgcccagtacatgaccttacgggacttt cctacttggcagtacatctacgtattagtcatcgctattaccatggtgatgcggttttg gcagtacaccaatgggcgtggatagcggtttgactcacggggatttccaagtctccacc ccattgacgtcaatgggagtttgttttggcaccaaaatcaacgggactttccaaaatgt cgtaacaactgcgatcgcccgcccgttgacgcaaatgggcggtaggcgtgtacggtgg gaggtctatataagcagagctcgtttagtgaaccgtcagatcactagaagctttattgc ggtagtttatcacagttaaattgctaacgcagtcagtgcttctgacacaacagtctcga acttaagetgeagtgactetettaaggtageettgeagaagttggtegtgaggeactgg gcaggtaagtatcaaggttacaagacaggtttaaggagaccaatagaaactgggcttgt $\verb|cgagacagagaagactcttgcgtttctgataggcacctattggtcttactgacatccac|\\$ tttgcctttctctccacaggtgtccactcccagttcaattacagctcttaaggctagag tacttaatacgactcactataggctagcctcgagaattcacgcgtggtacctctagagt cgacccgggcggccgcttccctttagtgagggttaatgcttcgagcagacatgataaga tacattgatgagtttggacaaaccacaactagaatgcagtgaaaaaaatgctttatttg tgaaatttgtgatgctattgctttatttgtaaccattataagctgcaataaacaagtta acaacaacaattgcattcattttatgtttcaggttcagggggagatgtggggaggttttt cgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatgg cgtgaccgctacacttgccagcgccctagcgcccgctcctttcgctttcttcccttcct $\verb|ttctcgccacg| ttcgccggctttccccgtcaagctctaaatcgggggctccctttaggg|$ ttccgatttagtgctttacggcacctcgaccccaaaaaacttgattagggtgatggttc acgtagtgggccatcgccctgatagacggtttttcgccctttgacgttggagtccacgt tetttaatagtggactettgttecaaactggaacaacactcaaccetateteggtetat tcttttgatttataagggattttgccgatttcggcctattggttaaaaaatgagctgat ttaacaaaaatttaacgcgaattttaacaaaatattaacgcttacaatttcctgatgcg gtattttctccttacgcatctgtgcggtatttcacaccgcatacgcggatctgcgcagc accatggcctgaaataacctctgaaagaggaacttggttaggtaccttctgaggcggaa agaaccaggatccgcgtatggtgcactctcagtacaatctgctctgatgccgcatagtt aagccagcccgacacccgccaacacccgctgacgcgccctgacgggcttgtctgctcc cggcatccgcttacagacaagctgtgaccgtctccgggagctgcatgtgtcagaggttt tcaccgtcatcaccgaaacgcgcgagacgaaagggcctcgtgatacgcctatttttata ggttaatgtcatgataataatggtttcttagacgtcaggtggcacttttcggggaaatg tgcgcggaacccctatttgtttatttttctaaatacattcaaatatgtatccgctcatg agacaataaccctgataaatgcttcaataatattgaaaaaggaagagtatgagtattca acatttccgtgtcgcccttattcccttttttgcggcatttttgccttcctgtttttgctc acccagaaacgctggtgaaagtaaaagatgctgaagatcagttgggtgcacgagtgggt tacatcgaactggatctcaacagcggtaagatccttgagagttttcgccccgaagaacg

 ${\tt ttttccaatgatgagcacttttaaagttctgctatgtggcgcggtattatcccgtattg}$ ${\tt acgccgggcaagagcaactcggtcgccgcatacactattctcagaatgacttggttgag}$ ${\tt tactcaccagtcacagaaaagcatcttacggatggcatgacagtaagagaattatgcag}$ gaccgaaggagctaaccgcttttttgcacaacatgggggatcatgtaactcgccttgat cgttgggaaccggagctgaatgaagccataccaaacgacgagcgtgacaccacgatgcc cccggcaacaattaatagactggatggaggcggataaagttgcaggaccacttctgcgc tcggcccttccggctggctggtttattgctgataaatctggagccggtgagcgtgggtc tcgcggtatcattgcagcactggggccagatggtaagccctcccgtatcgtagttatct acacgacggggagtcaggcaactatggatgaacgaaatagacagatcgctgagataggt gcctcactgattaagcattggtaactgtcagaccaagtttactcatatatactttagat tgatttaaaacttcatttttaatttaaaaggatctaggtgaagatcctttttgataatc tcatgaccaaaatcccttaacgtgagttttcgttccactgagcgtcagaccccgtagaa aagatcaaaggatcttcttgagatcctttttttctgcgcgtaatctgctgcttgcaaac aaaaaaaccaccgctaccagcggtggtttgtttgccggatcaagagctaccaactcttt $\verb|tccgaaggtaactggcttcagcagagcgcagataccaaatactgttcttctagtgtag|$ ccgtagttaggccaccacttcaagaactctgtagcaccgcctacatacctcgctctgct ${\tt aatcctgttaccagtggctgctgccagtggcgataagtcgtgtcttaccgggttggact}$ caagacgatagttaccggataaggcgcagcggtcgggctgaacggggggttcgtgcaca cagcccagcttggagcgaacgacctacaccgaactgagatacctacagcgtgagctatg agaaagcgccacgcttcccgaagggagaaaggcggacaggtatccggtaagcggcaggg tcggaacaggagagcgcacgagggagcttccagggggaaacgcctggtatctttatagt cctgtcgggtttcgccacctctgacttgagcgtcgatttttgtgatgctcgtcaggggg gcggagcctatggaaaaacgccagcaacgcggcctttttacggttcctggccttttgct ggccttttgctcacatggctcgacagatct

Figure 17 (continued)

Figure 18

